JAG

JOINT ACTION GROUP

For Environmental Clean-Up Of The Muggah Creek Watershed

Annual Report

to the Community

June 15, 2002

What is JAG?

Created in the fall of 1996, the Joint Action Group (JAG) is an innovative community-driven process – a group of individuals working together with the goal of remediating Canada's worst hazardous waste site found within the Muggah Creek watershed. First conceived to find a solution to the Tar Ponds, JAG has evolved and broadened its mandate to include the former Coke Ovens site, the Tar ponds and impacts of the municipal landfill, all part of the Muggah Creek watershed area.

JAG is comprised of local residents, business people, representatives of the three levels of government and youth. JAG's infrastructure is made up of several working groups and subcommittees which include: Health Studies, Site Security, Public Education and Participation (PEP), Governance, Environmental Data Gathering and Research (EDGAR), Remedial Options, Ethics, Finance, Planning, and Human Resources. JAG is supported by a Secretariat and managed by a Steering Committee which reports to a Roundtable, that is made up of approximately 50 members representing the community.

JAG strives to work together as one community, one "voice", melding the individual interests of all those involved for the greater good of the community.

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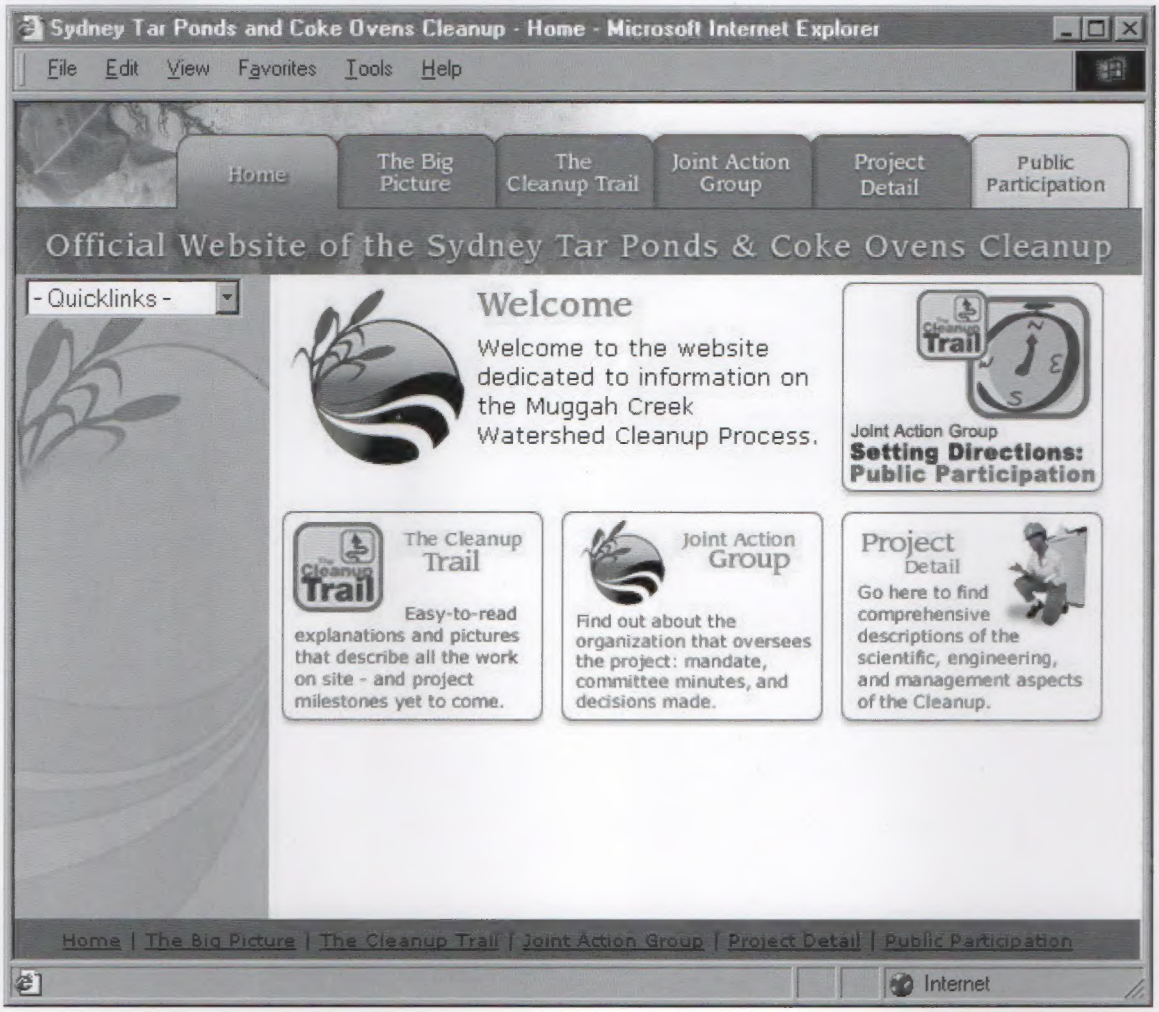
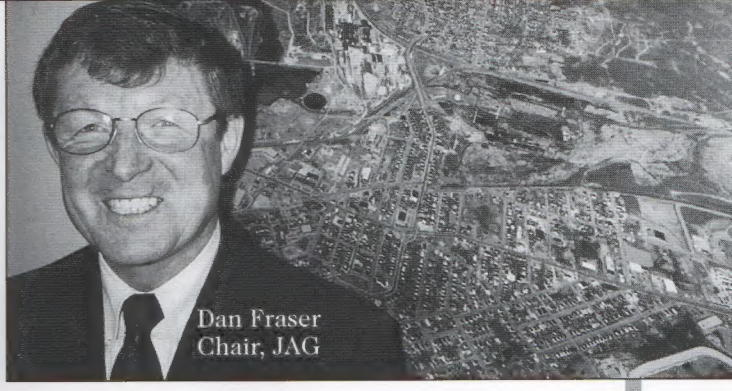


Chairman's **Message**


Dan Fraser
Chair, JAG

In reading this annual report, volunteers, staff and supporters of the Joint Action Group can reflect with pride on a year of major accomplishments towards determining appropriate cleanup solutions for the Tar Ponds and Coke Oven Sites and possible site impacts on our community.

In terms of community health, several important projects are worth noting. A study is under way on reproduction in the Sydney area, including: early pregnancy outcomes, body burden, uptake of contaminants by pregnant women and people's perceptions, attitudes and behaviour concerning reproductive health. This important research is being carried out by a team from McMaster University in Hamilton, Ont., the University College of Cape Breton, and Health Canada. The team is led by Dr. Henry Muggah from the Institute of Environment and Health and the Department of Obstetrics and Gynecology at McMaster.

On April 24, 2001, governments released findings from soil and water testing in the area North of the Coke Ovens. The next day, based on community concerns, JAG's Roundtable passed a motion asking governments to carry out an acute and chronic health risk assessment and more detailed soil sampling. This led to one of the largest residential soil-sampling programs to date in Canada. The resulting Chronic Health Risk Assessment report was peer reviewed by toxicologists and risk assessment specialists from Canada and the U.S. The Chief Medical Officer of Health for Nova Scotia reviewed the findings and was able to reassure residents that the area is a safe place to live.

The Department of Health tested blood and urine from young children, pregnant women, and other interested citizens for exposure to lead and arsenic. Results showed Sydney residents to be at no greater risk from lead or arsenic than people in other urban centres across Canada.

At the Tar Ponds and Coke Ovens sites, the necessary but time-consuming environmental site assessments are nearly complete. The scientific results have been, or soon will be, presented to the community and forwarded to consultants to incorporate in the evaluation of remedial alternatives.

At the old landfill, water diversion, a passive gas venting system and the installation of leachate collection pipes are complete and portions of the landfill have been graded with gravel in preparation for the clay barrier and other layers that will form the cap.

Construction began on 4.8 kilometers of Muggah Creek interceptor sewer. It will collect up to 13 million litres a day of untreated sewage from Wash Brook, the Ashby and Hardwood Hill areas and portions of Whitney Pier and divert it around the Tar Ponds to Battery Point, the location of a proposed treatment plant.

Eighteen drums containing samples of Tar Ponds sludge were shipped to laboratories in Canada for bench-scale tests. Results will provide technical specialists with additional valuable information on the ability of commercially available technologies to treat this material.

Several construction projects were completed at the Coke Ovens site to facilitate both the removal of above-ground structures and future cleanup work. A new access road has reduced truck traffic on nearby streets, while a new wash pad and decontamination facility ensures that vehicles leaving the site are properly cleaned. Services have been installed for a site office.

JAG began a major community engagement process in January 2002 to ensure that the concerns and views of citizens are reflected in the criteria used to evaluate cleanup technologies. These criteria will be used by technical experts as they complete the Remedial Action Evaluation Report (RAER) that should be completed by the end of December 2002.

Our community is truly advancing along the 'cleanup trail.' The outstanding dedication of volunteers in the JAG process, together with the commitment of JAG Secretariat staff, deserves recognition. All have clearly made a difference. I also commend the project managers, Conestoga-Rovers & Associates, and the many contractors and subcontractors at the sites who demonstrate daily that the knowledge and ability to get the job done is available. They do so keeping the health and safety of employees and citizens a priority and they respond promptly to any community concerns we bring to their attention.

Perhaps the best indicator of our progress is knowing that within six months, JAG will receive a report detailing feasible cleanup alternatives for the Tar Ponds and Coke Ovens site. We are well positioned for the historic task that follows: discussing this report with the community and bringing to governments our recommendation of a preferred cleanup option.

D. E. Fraser

Dan Fraser, JAG Chairman

JAG

Working Group Reports

Environmental Data Gathering and Research Working Group (EDGAR)

Comprehensive sampling programs required to complete the Phase II and III Environmental Site Assessment (ESA) of the Tar Ponds and Coke Ovens site were completed in the past year. In addition to soil sampling and analysis for the Phase II and III studies, some of the other sub-studies carried out to help fully characterize site contamination included:

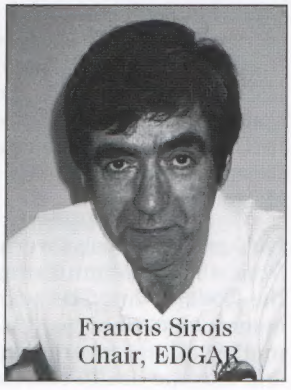
- Geophysical surveys in the North of Coke Ovens (NOCO) area, as well as on the Coke Ovens site and along the shoreline of the Tar Ponds
- a survey of wildlife and fish on the site and in the associated waterways
- repeated sampling of all waterways flowing through the site and into the Tar Ponds
- survey of the benthic population within the Tar Ponds
- assessment of contaminant contributions from the Municipal Ash and Industrial Disposal (MAID) area
- hydrological and groundwater modeling of the MAID site
- determination of contaminant loading into the Tar Ponds and the flux of contaminants into the harbour
- analysis and delineation of leftover sub-ground infrastructure
- background soil sampling programs to help determine including 'Far-a-Field', urban and rural reference values

Over the course of the year there was also tremendous progress building the project's Geographic Information System (GIS) database, adding such things as historical site data, aerial photographs, historical plans of facilities and other site infrastructure as well as all Phase II and III results.

The integration of all these efforts provides the basis for completing the Ecological and Human Health Risk Assessment for the sites. These studies will define the scope of the cleanup and also help to establish site-specific cleanup targets for each contaminant.

To get the site ready for its cleanup phase, significant progress has been made on a number of other key projects recommended by EDGAR.

The Sydney Landfill closure is progressing rapidly. The entire landfill has been re-shaped, a gas collection layer and piping has been installed, and the MAID Pond has been secured with a barrier wall. In addition, surface water has been diverted around the landfill. The sealing clay layer will be installed next, followed by the protection and top surface layers.



Francis Sirois
Chair, EDGAR

The sewer collector project is well under way, with two major segments installed. The material-handling facility, built to store soil excavated from the sewer trenches until it can be tested to determine appropriate disposal options, has proven to be very effective.

To minimize traffic and dust from vehicles entering or leaving the site, a new access road was completed to the Coke Ovens site and a truck washing and decontamination facility was installed.

Removal of the remaining derelict above-ground structures at the Coke Ovens site has started. The dilapidated By-products building has been dismantled and the two remaining stacks are about to be cut down in pieces. Work to remove the other surface structures like storage tanks will continue in the coming year.

Air monitoring continues with each site activity. Results from the 2001 monitoring program continued to show excellent results for the Muggah Creek watershed area.

In summary, the EDGAR working group is confident that the knowledge required to define the scope of the problem is being acquired, allowing that the site be ready for the main cleanup phase to be tackled by the end of 2004.

Public Education and Participation Working Group

Through the Public Education and Participation (PEP) working group, JAG volunteers and government representatives strive to continuously improve JAG's interaction with the community.

One of the fastest growing methods of communication is the Internet. Two web sites previously were maintained separately (although linked) by JAG and Conestoga-Rovers & Associates, the project management consultant. From discussions among PEP, Conestoga-Rovers and communications advisors from the various levels of government, a decision was made to merge these two sites and provide a new look and expanded resources while keeping JAG's web address, www.muggah.org. A local company with a national reputation for quality, MediaSpark, was selected to create a new look and restructure the site in a way that was easy to navigate, whether the user was looking for historical information about the site, access to JAG's databases, or the project-specific technical details offered by Conestoga-Rovers. With integration, there is one comprehensive, official site.

This spring, there will be an exciting addition to the web site: Muggah4Kids! Also designed by MediaSpark, and under the direction of PEP, this site is tailored to children in the community, their parents and teachers. Through colourful pages that capture key information with photographs, other images and easy-to-read text, plus interactive games and downloadable work sheets, Muggah4Kids! will give children a clear understanding of issues associated with the Tar Ponds and Coke Ovens site in a way that is exciting and inviting.

Another local company, Folkus Atlantic, was commissioned to create a follow-up video to a previous production that was called The Legacy. The new video, On the Cleanup Trail to Our Future, builds on the earlier effort by updating signficant progress made in the last two years on many fronts. The new video will serve as a useful educational tool over the next year.

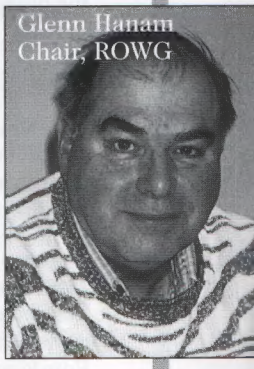
PEP shares with the Remedial Options Working Group (ROWG) a mandate to oversee implementation of JAG's Public Participation Process (PPP). An implementation plan for the PPP was developed with extensive input from the community, Environment Canada, JAG Secretariat staff and other volunteers. This process, and accomplishments to date, are outlined elsewhere in this annual report.

PEP has continued to guide outreach activities on which JAG has come to rely as a means of encouraging community involvement and engagement. These activities include neighborhood visits, school presentations, community displays and informal coffee breaks with small groups of residents near the sites. These activities allow us to hear directly from the community about concerns, issues and valuable suggestions for improving our communication programs.

Remedial Options Working Group

The Remedial Options Working Group saw many of its recommended projects reach an active stage in the past year. This allowed ROWG to scale back its meeting schedule to once a month for ongoing monitoring of these projects and periodic updates through presentations. Topics dealt with at ROWG this past year included:

- The Technology Demonstration, or 'Tech Demo' program. Findings from this program will be a significant consideration for CBCL as the company prepares the Remedial Action Evaluation Report (RAER) for the cleanup. Samples of Tar Ponds sludge for the Tech Demo program were collected in September 2001 and were shipped to the proponents' test facilities across Canada in November. Vaughan Engineering made a presentation to ROWG on the program in December. Laboratory-scale testing took place in early 2002 and the Tech Demo report should be delivered to CBCL by early summer.


Glenn Hanam
Chair, ROWG

- ROWG members who are also on the Technical Demonstration Advisory Committee (TDAC) will visit some of the proponents' testing facilities in mid-April.

Future Site Use (FSU) Sub-committee

Potential future uses of the Tar Ponds area and Coke Ovens site is an essential factor to consider by the experts who are preparing the Remedial Action Evaluation Report. In keeping with a strategic plan, the Future Site Use sub-committee recommended the development of a public information package for use in any discussions with the community about this important subject.

The information package was tested with focus groups in December 2001. Based on feedback and suggestions from focus group participants, the project management consultant, and planners with Cape Breton Regional Municipality, this package was revised and was then provided to JAG Secretariat staff for inclusion in the Public Participation process. The package includes such things as some of the key considerations for planners when developing site-use options and examples of how similar industrial sites elsewhere have been cleaned up and redeveloped.

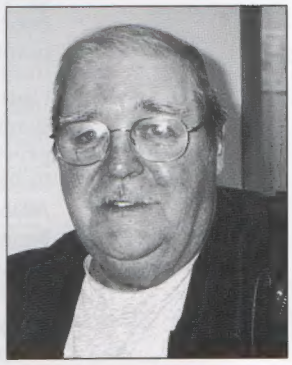
The future site use package has since been presented to many groups as part of the Public Participation process, with many participants also completing a questionnaire to indicate some of their personal preferences for future use of the Tar Ponds and Coke Ovens sites. Results will be included in the report on the evaluation criteria for cleanup options.

Site Security Working Group

The role of the Site Security Working Group (SSWG) is to promote the health and safety of community residents and site workers while providing a safe environment during the cleanup of the Tar Ponds and Coke Ovens sites.

Emergency response capacity was among the first concerns identified by JAG when considering public safety associated with the Tar Ponds and Coke Ovens sites. In consultation with the Emergency Measures Organization, a response plan was developed but the nearest vehicle suitably equipped for dealing with hazardous materials emergencies was based in Truro. As a result, $500,000 for a truck, equipment and training was included in the $62-million cost-share agreement among the three levels of government to finance cleanup preparatory projects recommended by JAG. Due to this JAG initiative, Cape Breton Regional Municipality now owns the vehicle and equipment, which is available for any emergency locally or, under mutual aid agreements, elsewhere in Cape Breton.

On May 10, 2001, students of Memorial Junior High School in Whitney Pier experienced first-hand this new emergency response capability and members of CBRM's newly trained hazardous material response team showed off the response vehicle and equipment, such as specialized clothing and breathing apparatus. Principal Ken Graham and Vice Principal Peter Bren helped organize the event. We are grateful to school administration, students and teachers for their interest in this important community asset.



Harry Muldoon
Chair, Site Security

The SSWG also recommended that perimeter fencing around the Tar Ponds and Coke Ovens site include warning signs posted at regular intervals. This signage, which states "No Trespassing" and "Human Health Hazard," is now installed, ensuring that residents and visitors to the area have adequate notice of the dangers from site contaminants and physical hazards such as derelict above-ground and below-ground structures.

The SSWG is also mindful of the need to warn the boating public by having signs placed at the entrance to Muggah Creek from Sydney harbour. After consultations with the Harbour Master, work is progressing to have such a sign erected in a manner easily viewable by boaters.

Health Studies Working Group

The mandate of the Health Studies Working Group is to recommend studies that will determine past, present and future health effects, if any, from the Tar Ponds and Coke Ovens site on residents of Cape Breton County. For practical purposes, the boundaries of Cape Breton Regional Municipality (CBRM) are used.

To meet this broad mandate, the HSWG determined that any projects it initiates must assess not only impacts from past steel-making, coke production or related manufacturing, but also the site as it exists today. Such

investigations should also ensure no harmful effects occur during actual remediation work, and that adequate baseline information is available for future studies.

The past year marked a turning point for the HSWG. It completed its Strategic Action Plan and passed five motions with 56 parts to address five key objectives:

- Complete a public health assessment using as a guide the model developed by the U.S.-based ATSDR (Agency for Toxic Substances and Disease Registry).
- Achieve broad-based participation in the public health assessment process and in identifying and acting on recommendations.
- Ensure comprehensive ongoing communications for the Public Health Assessment and for any health aspects of the cleanup activities.
- Establish a system for ongoing monitoring of human health and health outcomes in Cape Breton County.
- Work with partners to develop and implement a strategic action plan for a healthy community, by reporting all health-related information to appropriate groups and agencies and by implementing recommended health actions.

Some of these motions are not new, nor are they limited to JAG. Several are already under way and are being implemented by various provincial or federal bodies or research initiatives.

One key research initiative is to update and build on earlier findings of the cancer mortality study for Cape Breton County, and further analyze the incidence of lung, breast and colon cancers for potential links with local environmental factors. This was recommended in the initial mortality study, results of which are now being geo-coded as part of JAG's overall GIS database. This will make it easier to analyze potential environmental links. This project is being funded under the Health Canada-Environment Canada Toxic Substance Research Initiative (TSRI) program and will continue until 2004.

Another key study to examine potential past and present effects from the sites is to assess the reproductive health of the community. This JAG-recommended study is being led by researchers from McMaster University and the University College of Cape Breton and will continue until the end of 2003. It has four major segments:

- Epidemiology of reproductive health outcomes (losses in first 12 weeks of pregnancy)
- Contaminant body burden and endocrine disruption (examining the placenta after birth for evidence of environment-related contaminants)
- Community-based psycho-social responses to environmental threats to reproduction health (the survey is completed, data is now being analyzed)
- Integration and overall assessment of environmental reproductive health (including the analysis of all the studies' geo-coded findings).

Within the long list of motions, two other key studies have been recommended to better understand past-to-now results:

- A 'cohort' study of health outcomes of former workers at the sites. This involves reviewing the detailed medical history of former steelworkers and analyzing links between their exposure history and health outcome.
- A 'cross-sectional' study of area residents, with comparison to reference areas, to measure the sites' impact for other potential historical effects (i.e. neurotoxic disorders, respiratory problems, asthma, allergies, infections, dermatitis, immune disorders, cardiovascular anomalies, diabetes) on residents' present and future health.

To further understand whether past activities at the industrial sites may be having any adverse health effects now, the HSWG also requested a study of locally grown vegetables and berries, where soils may have been impacted by contaminants from the sites. The uptake of soil-based contaminants by plants does vary, so the potential effects on human health are not well understood. The HSWG is hopeful that results of a scientifically sound sampling program will be available, so that residents who have expressed concern about vegetables and berries, can be given specific recommendations next year.

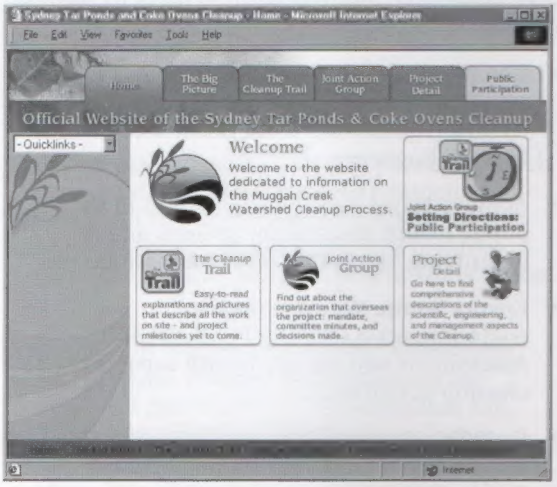
While some of JAG's other major projects and working group initiatives have reached, or are nearing fruition, the longer-term nature of health studies means that the HSWG is just on the threshold of its mandate.

Governance Working Group

The Governance Working Group oversees the process and procedures by which JAG pursues its goals. Improvements to JAG's internal process is a continuous effort requiring considerable discussion and research. During the past year, the Governance Working Group focused its efforts on the following areas:

- Six Core Principles: Early in the year, we discussed ways in which JAG could ensure that it adheres to its six core principles. A motion was passed to acquire a facilitator to work with JAG working groups to develop and apply criteria that would achieve this. This effort was also the nucleus of JAG's Public Participation Process.
- Proposed amendments to By-laws: The By-laws of the Joint Action Group describe how the organization operates. Amendments to the Bylaws can be made at the Annual General Meeting or at a special meeting of the membership. In keeping with its mandate, the Governance Working Group has developed for consideration at the 2002 Annual General Meeting several proposed amendments to the By-laws, covering dispute resolution, how working groups deal with various proposals, and methodology for breaking a tie vote during the election of Chair.
- The Governance Working Group has defined a concept, which is very important to JAG, the concept of consensus. The Joint Action Group operates on the principle that most decisions are reached by consensus. For this to be effective though, there must be a clear definition of what JAG means by the term consensus. For most, this means more than a simple majority but not necessarily that a single dissenting opinion can block a decision. By defining consensus within JAG, the Governance Working Group has clarified and simplified JAG's decision-making process.

Fairness in a process must exist both in the spirit and in the letter of the rules. There should be adequate time for members to review proposals. Airing of views and winnowing of concerns must be an integral part of the process. A process modeled on these concepts will yield an educational component as well as ensuring that recommendations made to government are sound.



The new, improved www.muggah.org

New, exciting, informative and easy! The re-energized *www.muggah.org* is JAG's official website for the Muggah Creek remediation project. Its new format was developed in Sydney by MediaSpark.

Tabs on the main page lead the user to information on JAG and the remediation project under categories such as The Big Picture, The Cleanup Trail, the Joint Action Group and Project Details. The fifth tab, Public Participation, gives the public interactive means of providing their input on matters relating to the selection of evaluation criteria for remedial technologies and future site use.

And soon to come, a section specifically for children, their parents and teachers. *Muggah4Kids!* is where tomorrow's leaders will be able to learn – through colourful, interactive images, games and worksheets – about the legacy of the Tar Ponds and Coke Ovens site and the benefits of a cleanup. *Muggah4Kids!* will be informative yet fun, with features that teachers will find resourceful and easy to use. Check us out at *www.muggah.org*, and get the big picture!

JAG

Roundtable Resolutions

The following summarizes the major motions approved by the JAG Roundtable during the fiscal year from April 1, 2001 to March 31, 2002:

- that a facilitator be acquired to work with the various working groups to develop and apply appropriate criteria to ensure adherence to JAG's six core principles, and that the facilitator should report to the Steering Committee.
- that governments relocate residents of Tupper Street, Laurier Street, and Hankard Street, and that government offer the options of relocation in three to six months.
- that governments conduct a health risk assessment to determine the chronic effects of exposure to contaminants identified in the North of Coke Ovens (NOCO) area as part of the draft Phase II Environmental Site Assessment of the Coke Ovens site. This would include consideration of area-specific lifestyle, historic exposures, relevance of existing CCME guidelines as remediation criteria, and the development of required remediation criteria and gathering any other data that is required but not presently available to complete the risk assessment.
- that background soil sampling which is already planned, be supplemented to include data required for a health risk assessment, and to assess the zone of airborne deposition, if any, from former Coke Ovens operations.
- that governments carry out a study to further define contaminant concentrations in surface soils of residential areas between Frederick and Hankard Streets, undeveloped portions of the NOCO area and residential properties beyond the NOCO area. This would include data from private residences, and data from residential areas bordering the site in all directions.
- that governments approve an assessment of the origins of the contaminants identified in the draft NOCO report.
- that governments secure funding for these initiatives without jeopardizing any projects approved under the current $62-million cost-share agreement.
- that the above noted work be carried out as quickly as possible, due to the possibility that people may be exposed to unacceptable levels of environmental pollutants by daily activities on their properties and the worry caused by this possibility.
- that governments facilitate timely collection and testing for contaminants in blueberries and a selection of backyard-grown vegetables in the Sydney area for the 2001 growing season.
- that governments obtain the services of a botanist, in consultation with a food toxicologist, to make at least two community presentations on the uptake of contaminants by garden vegetables grown by residents of the Sydney area.
- that governments provide funding and resources to complete the Future Site Use strategy by the specified time frame of March 2002
- That the following projects be funded to fulfill Goals #1 through #5 of the HSWG Action Plan:
    1. Complete a literature review of Coke Ovens/Steel industry workers; of communities around similar industries; and communities faced with similar health issues.
    2. Conduct a Garden Study that includes both agricultural and horticultural plants to follow background data gathering, if necessary.
    3. Complete more detailed soil sampling, if necessary.
    4. Collect baseline data on determinants of health/define indicators.
    5. Investigate effect of pollution on health.
    6. Determine baseline data on determinants of health/define indicators and determine need for other outcome studies.
    7. Review mortality and morbidity data.
    8. Pursue/implement mortality/morbidity recommendations.
    9. Conduct a cross sectional study of current residents.
    10. Conduct a Sydney follow-up study (past residents) similar to that done at Love Canal.
    11. Geo-code all health data such as cancer incidence; reproductive outcomes.
    12. Conduct cluster analyses of geo-coded mortality data; and, as available, cancer incidences and reproductive outcome (perinatal geo-coded databases).

Roundtable Resolutions continued

13. Complete a cohort study of Coke Ovens workers and steelworkers.
14. Determine present exposure pathways.
15. Categorize each exposure pathway as a completed exposure pathway or a potential exposure pathway.
16. Determine whether the exposure pathway should be eliminated or further discussed in the health assessment.
17. Determine past exposures (cross-sectional survey).
18. Complete Peer Reviews (CHRA) for projects, e.g.: Tech Demo MAID (Municipal Ash and Industrial Disposal Site) cleanup solutions.
19. Conduct community-based monitoring.
20. Support standards of CEAA Health Aspects.
21. Investigate link between exposure and health effects.
22. Use health outcome data to provide information on the general health status of the community living near the site.
23. Categorize the site: Urgent Public Health Hazard, Public Health Hazard, Indeterminate Public Health Hazard, No Apparent Public Health Hazard, or No Public Health Hazard.
24. Make recommendations to improve public health and to undertake specific health interventions.
25. Determine what additional site information is required. Address these implications by making recommend-ations for future environmental and health studies (if necessary).
26. Identify actions necessary to mitigate or prevent adverse health effects actions.
27. Identify community health perceptions and concerns (past & present) related to the Muggah Creek watershed and about possible exposure routes through various means such as opinion polls, community meetings, surveys, discussion groups, etc.
28. Disseminate information to the community about the site, the public health assessment process, JAG, and the HSWG through a variety of ways that are acceptable to the community.
29. Document/organize and utilize community views about desires and mechanisms to be involved in the ongoing public health assessment process.
30. Build community trust by (a) incorporating findings of the Community Consultation/Animation into the Health Studies Working Group's Strategic Action Plan, (b) obtaining a list of upcoming remediation projects (starting April 2002), and (c) establishing communication/ participation plan/program for each including:
    - Communication needs assessment (market research)
    - Strategic/operational planning
    - Partnership strategy: Secretariat, ICAC, EP, PMC.
    - JAG internal communication
    - Evaluation

    Suggested "roles" for each partner include:
    - ICAC: Strategic Action Planning
    - JAG – front face to the community
    - PMC – project development, technical spokesperson
    - PEP – community input
31. Undertake community based research and establish longer-term measurable objectives/communications strategy (literature review of polls; focus group meetings).
32. Operationalize a broad-based communication strategy on the Public Health Assessment process and milestones (media; public relations, etc.)
33. Engage the Secretariat, ICAC, PEP, and the Project Management Consultant in appropriate roles.
34. Ensure internal communications within JAG on major issues.
35. Complete an evaluation of the communication process (independent consultant: stakeholder interviews, polling).
36. Operationalize findings from community animation project ; establish indicators (feedback mechanism; ongoing consultations, etc.).

37. Integrate the Community Health Risk Assessment Committee (CHRA) Model into communication strategy (consultation; billboards; media; public relations).
38. Establish a registry of concerns (phone; staff; administration).
39. Ensure the Secretariat, ICAC, PEP, and the PMC are working together to plan and implement the communications strategy (meetings).
40. Ensure community capacity building to support process (meetings; education).
41. Complete evaluation regarding timelines and dissemination of health risk.
42. Arrange a mini-symposium for HSWG on the topic of "Monitoring Indicators of Human Health" with invitations to Health Canada, Department of Health, and other significant population health agencies.
43. Through collaborations and special initiatives, refine health indicators to the community level, i.e.: Cape Breton County and appropriate comparison group(s).
44. Undertake a cross-sectional study following appropriate development of study purpose, methods, criteria, collaborators, etc. (year 2002).
45. Produce an "Annual Report Card" of the health indicators of Cape Breton County.
46. Establish a communication plan for indicators.
47. Repeat necessary indicator studies (e.g., mortality, incidence, reproduction, and cross-sectional surveys) every 5 years.
48. Identify partners (public, private and NGO sectors, municipality, business groups, special interest groups, etc.) and establish a structure for operating (set criteria; process).
49. Establish an operating structure for partners (consultation; set-up).
50. Establish educational activities for community groups (presentation; materials).
51. Establish mechanism for the promotions of all related health actions.
52. Ensure government is aware of current information on information gaps.
53. Gain consensus on community indicators (focus groups).
54. Develop plan (community process; meetings).
55. Establish coordinating mechanism for the implementation of the plan's ongoing administration and evaluation (consultant).
56. that governments provide funding to fulfill any outstanding HSWG motions within the database of motions held by the Joint Action Group.

- that JAG accept the AGRA "Development Of Interim Separation Zones" Final Report, based on EDGAR having reviewed the report and being satisfied that the scope of the work, as defined in the Terms of Reference, was fulfilled.
- that signs for the Coke Ovens site and Tar Ponds site fence proposed by Governments and recommended by the Signage sub-committee, be approved. Fence signs to read: "Human Health Hazard" (with symbol of three people with line through) and entry gate signs to read: "No Trespassing Human Health Hazard - Absolutely no unauthorized entry - All visitors must be equipped with approved personal protective equipment."
- that governments arrange for the regional geologist from the Nova Scotia Department of Natural Resources to examine the boxes of core samples collected during the Phase II and III Environmental Site Assessments, select those cores that highlight significant geological information and/or that, due to their condition, may provide future historical or scientific benefits. And that these cores be shipped for preservation to the Nova Scotia Provincial Core Library "prior" to the onset of winter.
- that every effort be made to have the Remedial Action Evaluation Report (RAER) completed as soon as possible and no later than December 2002.
- that the public consultation and JAG recommendations to governments be completed by no later than March 2003.
- that governments conduct a study to determine a fair mechanism for property value protection during the remediation of the sites.

JAG

Activities for the Year

Interceptor Sewer

Each day, up to 13 million litres of untreated sewage from homes and businesses empties into the Tar Ponds from 33 outfalls along its shores or via Wash Brook and Coke Oven Brook. JAG's Roundtable concluded that diverting sewage away from the Tar Ponds was a critical preliminary step to the cleanup. The interceptor sewer will do this, redirecting the sewage via new underground pipes to Battery Point and lessening the risk of the Tar Ponds being further contaminated. This work is now well under way. In addition to two main branches, the project includes construction of several minor lines that feed into the main interceptor. In all, some 4.8 kilometers (3 miles) of new lines are being installed.

A modern marine outfall to Sydney harbour will be built at Battery Point. This will consist of 200 meters (660 feet) of sewer pipe entrenched in the harbour bed, followed by 150 meters (500 feet) of diffuser pipe. Similar to the way a garden sprinkler works, the diffuser disperses waste water more gently and in many directions, rather than subjecting the harbour to a single heavy blast of water from the outfall pipe.

The sewer interceptor project entails several major construction projects to enable local contractors to bid on the work:

- a materials handling and storage facility on former Sysco property
- a sewer main line from Brookland Street to Battery Point
- a sewer main line from Victoria Road to Ferry Street

- a sewer line from Cape Breton Street to the Outfall works.
- a proposed lift station and Battery Point sewage treatment plant

Although there are numerous community benefits from the Muggah Creek interceptor sewer project, not the least of which is eliminating a major source of sewage odour near downtown homes and business, the main objective is to stabilize the Tar Ponds in preparation for full scale cleanup. Seven studies were completed to ensure this objective is met, including an environmental assessment screening under provisions of the Canadian Environmental Assessment Act.

During construction, air monitoring is a routine feature, as is the testing of soil excavated from the sewer line trench. When a section of trench is first opened, air quality in the area is checked, with regular follow-up monitoring to protect both workers at the site and the general public. Completion of the sewer project is scheduled for 2004.

Landfill Closure

An important step toward cleanup of the Tar Ponds and former Coke Ovens site is the capping of the Municipal Ash and Industrial Disposal (MAID) site, or old Sydney dump. JAG pressed for this activity as it will substantially reduce surface run-off and leachate impacting the Coke Ovens site and Tar Ponds. It will also mean a more attractive, landscaped site. The landfill contains nearly 100 years of residential and industrial waste. This project is costing approximately $11 million of the current $62-million cost-share agreement between the three levels of government.

Work currently under way includes leveling and contouring landfill waste material, capping the site and diverting surface water so it does not infiltrate the waste and generate leachate.

There are several key elements to landfill capping. A trench around the perimeter allows for the installation of a passive gas collection system for the methane and other gases naturally generated from decaying landfilled material. It also allows the placement of a leachate collection system. Once properly

compacted and contoured, a gravel base is spread over the top of the landfill, then a low-seepage clay barrier is installed to prevent water from rain or snow from permeating the landfill. The clay barrier is then covered with additional material to protect it from frost damage. Then, a 1.75-metre (six foot) soil cover is added which can be sodded or hydro-seeded to further protect the site from erosion and make it aesthetically pleasing.

This type of closure has proven to be an effective and environmentally sound method of managing decommissioned landfills around the world.

Somewhat more unique to this site was the need to also build a barrier wall between the landfill and MAID pond and reroute portions of MAID brook that flowed through or near the landfill. In addition to capping the landfill, diverting the brook and isolating MAID pond further reduces the volume of landfill leachate.

J & T Van Zutphen Construction Inc. of Port Hood is carrying out this work, with design and project oversight provided by the Sydney office of Vaughan Engineering in partnership with New Brunswick-based GEMTEC. Van Zutphen typically employs 13 people on the project, with regular employment for contracted local services such as trucking. The work is expected to be completed by the end of this year.

Remedial Action Evaluation Report (RAER)

CBCL, an international engineering firm with a long-standing presence in Sydney and partnered with ENSR was awarded a $575,000 contract to produce a Remedial Action Evaluation Report (RAER). This report, due by the end of December 2002, will outline what technologies are capable of remediating the sites and factors such as time frame, cost, local benefits and environmental impact. The RAER is what the community, through JAG's public participation process, will use in deciding which cleanup solution to recommend to governments. It will also be used in drafting a cleanup plan that will be submitted for federal-provincial environmental assessment. It will take into account information from the Phase II and Phase III Environmental Site Assessments of the Tar Ponds and Coke Ovens, bench-scale studies of technologies, coordinated by Vaughan Engineering Ltd., a detailed review of work done on similar sites elsewhere around the world, the evaluation criteria as determined by JAG's Public Participation Process and consideration of JAG's six core principles (economically responsible, environmentally sound, community driven, health conscious, publicly accountable and socially acceptable).

Public Participation Process - Our Future, Your Choice!

JAG launched a comprehensive Public Participation Process this past year to ensure that the community remains informed and involved in the process leading to cleanup of the Tar Ponds and Coke Ovens site. With the Public Participation Process, JAG is committed to ensuring the preferences of the broader community are reflected in our recommendations to governments. Several of JAG's overall goals and objectives relate specifically to this process:

Goals:

- broad, meaningful, community involvement in the development of evaluation criteria for cleanup options for the Tar Ponds and Coke Ovens site
- define options for long-term community involvement during the cleanup phase

Objectives:

- ensure that citizens have access to information
- recognize community knowledge and encourage input

- provide opportunities for mutual education and discussion
- provide opportunities for ongoing community involvement
- demonstrate how the community's contribution is reflected in developing evaluation criteria leading to the selection of cleanup alternatives

Step 1 of a three-step process had members of various organizations review a draft Public Participation Plan to ensure it was easily understood and met their expectations. Their comments and suggested improvements were considered in the final plan.

Step 2 involved asking residents for their views on the most important factors to consider when evaluating various potential cleanup technologies. In the period January-April 2002, JAG met with dozens of community groups and presented a workbook that explained JAG's six core principles. Then, bearing in mind those principles, participants completed a portion of the workbook and a questionnaire, rating various criteria that experts could apply when evaluating remedial options for the sites. Other individuals filled out workbooks on their own, receiving them by mail, in person at the JAG office, or downloading them from the JAG web site.

Experts from the Sydney office of the engineering firm CBCL will consider the results as they assess various cleanup technologies. They must also consider factors such as whether or not the technology meets Canadian regulatory requirements. All this information will be summarized in a Remedial Action Evaluation Report (RAER) scheduled for completion by the end of December 2002. The RAER will outline up to four cleanup alternatives for each site. Each alternative will be capable of doing the job. The RAER will outline advantages and disadvantages of each solution, such as cost, length of time, the numbers and types of workers needed and environmental impact.

Step 3 involves JAG bringing the RAER report to the community for review and comment, with feedback incorporated in JAG's recommendation to governments on a preferred option. In terms of community involvement, there should be no doubt that we are collectively at a critical phase, as the title says this is Our Future, Your Choice!

Phase III Environmental Site Assessment - Tar Ponds

The first three phases of the six-phase approach recommended by the Canadian Council of Ministers of the Environment (CCME) for decommissioning an industrial site involve progressively more detailed level of study of the site.

The Phase III Environmental Site Assessment (ESA) provides detailed information on the volume and distribution of contaminated soil, sediments and water, soil vapours and other details necessary to effectively evaluate remedial options. The Phase III ESA was conducted by JDAC Environment under the direction of project managers, Conestoga-Rovers & Associates.

The Phase III study examined sediment and water in the Tar Ponds, plus soil, soil vapour and groundwater in shoreline areas. It confirmed previous estimates that 44,500 cubic metres of sediments in the north and south ponds contain polychlorinated biphenyls (PCBs) at concentrations greater than 50 parts per million. It also confirmed 550,000 cubic metres of sediment contaminated with polycyclic aromatic hydrocarbons (PAHs).

The results were as expected, given the area's industrial history, untreated sewage and landfilling activities. The shoreline areas were included to determine whether or not contaminants enter the Tar Ponds from adjacent areas, particularly via groundwater. Previous studies found elevated concentrations of arsenic, beryllium, copper and zinc in subsurface soils on the western shoreline area, which was formerly the site of a concrete and asphalt plant, and a rail yard. The current study confirmed the presence of these chemicals, plus thallium, which had not previously been detected.

PAHs were found in sediment under slag on the east shoreline, known as the 'high dump' area. Further study revealed that slag which is being

quarried from that area is not affected. The provincial government will develop a slag management plan, as recommended by the consultant.

Based on current and historical data, the study also concluded that groundwater flows downhill to the Tar Ponds and not from the Tar Ponds into any adjacent properties. The consultants also made a number of recommendations for the shoreline area, many of which have already been started or completed. These include:

- additional assessment at the site of a former landfill on the southeast shore
- additional assessment around Coke Oven Brook
- further study of groundwater flow in an area near the south Tar Pond to confirm current and historical data

The final report of the Phase III ESA for the Tar Ponds is a major milestone toward cleanup of the contaminated site.

Phase II Environmental Site Assessment - Coke Ovens

This thorough evaluation of the former Coke Ovens site confirmed that it contains the typical array of soil and water contaminants associated with years of coking coal for use in the steel-making industry and related activities such as the production, storage and shipment of tar, benzol and other coal by-products. The Phase II study included the residential area of Whitney Pier North of the Coke Ovens site, as well as the Cape Breton Regional Municipality landfill site.

The report, based on hundreds of soil and water samples collected between July and November 2000, found extensive contamination from polycyclic aromatic hydrocarbons (PAHs). Although effluent and run-off from the Coke Ovens site caused much of the contamination in the Tar Ponds, the Phase II results showed one significant and positive difference between the two sites: namely that the Coke Ovens site has no PCB (polychlorinated biphenyls) contamination.

Its other contaminants include heavy metals and coal-related petroleum products such as benzene, naphthalene, toluene, ethylbenzene and xylenes. Contaminant levels were predictably higher at the sites of former production buildings and storage tanks, such as the former Domtar plant area and Benzol plant area.

Although portions of the Coke Ovens site have complex soil contamination, the Phase II study report determined that contaminants within its fenced-off area do not move via groundwater or surface water to nearby residential areas. In fact, the natural downhill flow of water drains into the Coke Ovens site from adjacent neighbourhoods, not vice versa. The Phase II report found that most contaminants which have not remained on the site generally move downhill via Coke Oven Brook or groundwater, into the Tar Ponds.

Fieldwork to acquire additional samples needed to complete the Phase III Environmental Site Assessment of the Coke Ovens site was completed by late fall 2001, with a report due by mid-2002. Both the Phase II and III studies are being carried out by JDAC Environment Ltd.

JAG

Auditor's Report

Excerpt from the KPMG Chartered Accountants Audited Financial Statements

Statement of Financial Position

March 31, 2002, with comparative figures at 2001

	2002	2001
Assets		
Current assets:		
Cash	$ 800	$ 800
Due from Provincial Government	91,534	107,188
Due from Federal Government	96,168	85,780
Due from general public	-	555
Prepaid Expense	-	2,198
	188,502	196,521
Capital Assets (note 2)	35,888	33,815
	$ 224,390	$ 230,336
Liabilities, Deferred Contributions and Net Assets (Deficiency)		
Current liabilities:		
Accounts payable and accrued liabilities	$ 64,398	$ 12,645
Due to Cape Breton Regional Municipality	136,747	193,050
	201,145	205,695
Deferred contributions (note 3):		
Capital assets	35,888	33,815
Net assets (deficiency)	(12,643)	(9,174)
	$ 224,390	$ 230,336

Statement of Operations and Changes in Net Assets (Deficiency)

Year ended March 31, 2002, with comparative figures for 2001

	2002	2001
Revenue:		
Federal Government grant	$ 193,364	$ 190,557
Provincial Government grant	182,734	198,740
Cape Breton Regional Municipality - contributed services (note 1b)	200,000	200,000
Amortization of deferred contributions related to capital assets	10,385	11,424
Federal Government funding for reduction of deficit (note 5)	13,875	8,193
	600,358	608,914
Expenditure:		
Salaries and benefits	319,801	295,594
Meetings	23,142	27,299
Office supplies	5,686	6,183
Travel	11,122	13,392
Advertising	4,832	2,425
Rental	3,197	3,452

continued

Legal and professional fees	5,730	16,818
Audit fees	2,200	2,200
Education	8,108	8,795
Telephone	9,624	8,069
Amortization of capital assets	10,385	11,424
Operating costs donated by Cape Breton Regional Municipality (note 1b)	200,000	200,000
	603,827	595,651
Excess of revenue over expenditure (expenditure over revenue)	(3,469)	13,263
Net assets (deficiency), beginning of year	(9,174)	(22,437)
Net assets (deficiency), end of year	$ (12,643)	$ (9,174)

Statement of Cash Flows

Year ended March 31, 2002, with comparative figures for 2001

	2002	2001
Cash provided by (used for):		
Operating activities:		
Excess of revenue over expenditure (expenditure over revenue)	$ (3,469)	$ 13,263
Items not involving cash:		
Increase in due from general public	555	(555)
(Increase) decrease in due from Provincial Government	15,654	(1,446)
(Increase) decrease in due from Federal Government	(10,388)	124,962
(Decrease) increase in prepaid expenses	2,198	(2,198)
Increase in accounts payable and accrued liabilities	51,753	3,135
Decrease in due to Cape Breton Regional Municipality	(56,303)	(137,161)
Amortization of capital assets	(10,385)	(11,424)
Amortization of deferred contributions related to capital assets	10,385	11,424
	-	-
Financing and investing activities:		
Increase in deferred contributions related to capital assets	12,458	2,520
Capital assets acquired	(12,458)	(2,520)
	-	-
Increase in cash	-	-
Cash, beginning of year	800	800
Cash, end of year	$ 800	$ 800

Accompanying notes to financial statements may be viewed at the JAG Secretariat.

JAG
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Bradley Miller	Blaine Campbell	Jennifer Garnier	Alexandra Malinowski
Chris Campbell	Karen Garnier	Michelle Ross	

**Membership covers April 1/01 to March 31/02. Chairs and Vice-Chairs at June 15/02.*

JAG Secretariat:

Left to right, front row: Roschell Clarke - Community Outreach Officer and Wendy MacMullin - Administrative Assistant

Middle row: Germaine LeMoine - Public Information Officer, Janet Gnatiuk - Executive Assistant, Dale Murphy - Website/Database Administrator.

Back row: Barry McCallum - Program Co-ordinator, Bev MacDonald - Secretary, Lorraine Munroe - Administrative Assistant and Dan Fraser - Chair JAG.

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